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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/367,081	01/24/2000	JEAN-FRANCOIS PENNEAU	15675.P291	3851

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EXAMINER	
VO, HAI	

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/367,081	PENNEAU ET AL.	
	Examiner	Art Unit	
	Hai Vo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-9,30,33-38-44,46,48,49 and 111-115* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-9,30,33-38,40-44,46,48,49,111-113 and 115* is/are rejected.

7)☒ Claim(s) *39 and 114* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim objections

1. Claim 46 is objected to because it is depended from a canceled claim 45.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 4-5, 8, 9, 30, 33, 36, 41-43, 46, 48, 49, and 115 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Anderman et al (US 5,143,805). Anderman teaches a microporous sheet for use as an electrode comprising 2-30 weight percent polyethylene, 70-98 weight percent of particulate material (abstract). The particulate material further comprises up to 30 weight percent of carbon black that has a surface area from 7 to 2000 m2/g (column 7, lines 8-14). The microporous sheet has the pores with an average pore size from 0.05 to 0.5 micron, within the claimed range. The microporous sheet is produced by extrusion and formed into thin free-standing sheet

product of less than 50 mils (column 7, lines 55-56, column 8, limes 5-10). Likewise, it is clearly apparent that the microporous sheet is self-supportive too! Anderman does not specifically disclose a BET specific surface and the breaking strength of the microporous sheet. It appears that the self-supportive microporous sheet of Anderman is made of the same materials with a similar composition (polyolefin and carbon black filler) and produced by the same extrusion process as that of the present invention. The amounts of polyolefin and carbon black are within the claimed ranges. The carbon black has a surface area within the claimed range. The microprous sheet has the porosity and pore size within the claimed ranges. Therefore, it is the examiner's position that the BET specific surface, and the breaking strength would be inherently present. This is in line with ***In re Spada***, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. Note ***In re Best*** 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made under 35 USC 102. It is the examiner's position that Anderman anticipates or strongly suggests the claimed subject matter.

5. Claims 6, 7, 34, 35, 37, 38, 40, 111, 112 and 113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderman et al (US 5,143,805) as applied to claims 1 and 30 above, and further in view of Yokota et al (US 3,852,113). Anderman does not specifically teach a porous electrode comprising a fluorinated polyolefin. Yokota, however, teaches a porous electrode comprising a fluorinated polyolefin (column 4, lines 50-55). Therefore, It would have been obvious to one

having ordinary skill in the art at the time the invention was made to employ a fluorinated polyolefin to form a porous electrode because it has good heat resistance and chemical resistance (Morimoto et al, US 4,862,328, column 3, lines 40-41).

Anderman does not specifically teach a porous electrode comprising polyether. Yokota, however, teaches a porous electrode comprising polyether in an amount of 2 weight percent (example 6, column 9, lines 1-5). Yokota discloses the composition being washed with water to remove the polyether and obtain a porous electrode. In light of specification, the recitation "the thermoplastic elastomers, soluble in polar organic solvents or water, which remain after the implementation of the manufacturing process" is understood that the thermoplastic elastomers are not completely removed from the composite material due to their affinity for the active carbon (Applicant's specification, lines 1-3, page 11). It appears that the electrode of Yokota is made of a composition that is similar to that of the present invention. Further, removal of polyether from the composition is to create the pores within the electrode. Accordingly, polyether disclosed in Yokota is thus not completely eluted from the electrode due to the affinity for the active carbon as well. This is in line with ***In re Spada***, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ polyether in the composition motivated by the desire to form the pores within the electrode. The amount of polyether disclosed by Yokota does not meet the range recited in the claim. However, since the amount is

recognized as s a result-effective variable, differences in the amount will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such particle size is critical or provides unexpected results. In the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ polyether having an amount instantly claimed motivated by the desire to control the degree of porosity of the electrode. This is in line with ***In re Aller***, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

6. Claims 1, 4-6, 8, 9, 30, 33-38, 41-44, 46, 48, 49, 111-113 and 115 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Morimoto et al (US 4,862,328). Morimoto teaches a porous electrode comprising 70% by weight of activated carbon having a specific surface area of 300 m2/g, 10% by weight of a PTFE (example 1). The porous electrode is a self-supportive film and has a thickness of 0.6 mm (example 1). The porous electrode is formed by extrusion (column 4, lines 4-6). The porous electrode has a maximum pore size of from 0.1 to 20 microns (column 3, lines 4-5). The porous electrode comprises a tetrafluoroethyleneperfluoroalkylvinyl ether copolymer as a polyether type (column 3, lines 35-40). Morimoto does not specifically disclose the average pore size, BET specific surface and breaking strength of the porous electrode. However, it appears that the porous electrode of Morimoto is made of the same materials in the amounts similar to those recited in the claims and produced by the same process as the present invention. The porous electrode further has a void

volume of 75%, capacity within the claimed ranges (tables 1 and 2). Since the amounts of the components, porosity and capacity altogether dictate the average pore size, BET specific surface and breaking strength of the electrode, and the amounts of the components and porosity are within the claimed range, it is the examiner's position that the average pore size, BET specific surface, and breaking strength would be inherently present. This is also in line with ***In re Spada***, 15 USPQ 2d 1655 (1990). Note ***In re Best*** 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made under 35 USC 102. It is the examiner's position that Morimoto anticipates or strongly suggests the claimed subject matter.

Allowable Subject Matter

7. Claims 39 and 114 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The inclusion of polyether with a molecular weight between 200,000 and 1,000,000 renders the claim patentable over the prior art.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 4-9, 30, 33-38, 40-44, 46, 48, 49, 111-113, and 115 have been considered but are moot in view of the new ground(s) of rejection.
9. The claim objections have been overcome by the present amendment.

10. The art rejections have been overcome by the present response (see the full second paragraph at page 8 and the first paragraph at page 11 of the 01/26/04 amendment).

Conclusion

11. Applicant's amendment filed on 08/15/2003 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

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